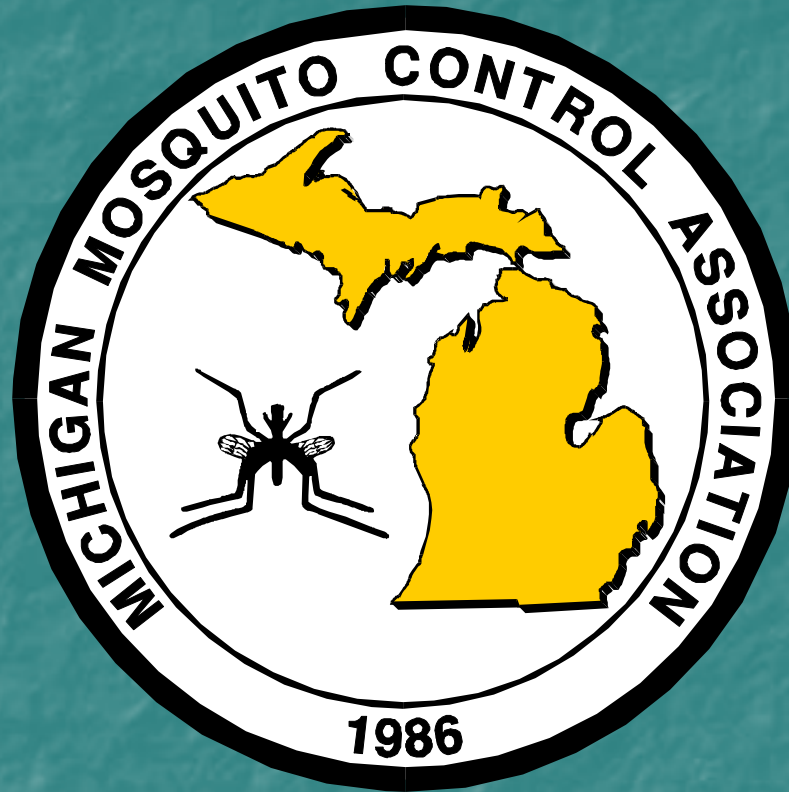


Elements of a Comprehensive Mosquito Abatement Program



By

Randy Knepper

IPM In Mosquito Control

- Surveillance
- Source Reduction
- Education
- Larviciding
- Adulticiding

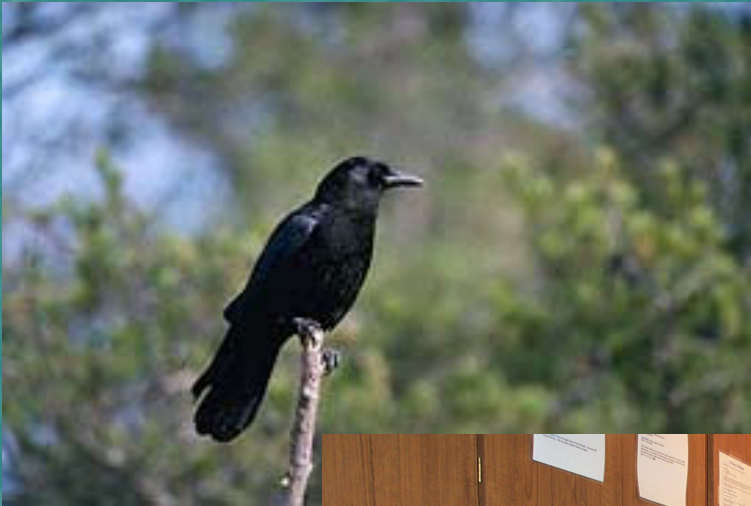
Surveillance

- Monitor Mosquito Population
- Monitor Avian Blood
- Monitor Dead Birds
- Monitor Horse Cases of WNV
- Monitor Human Cases of WNV

Mosquito Traps - 2002



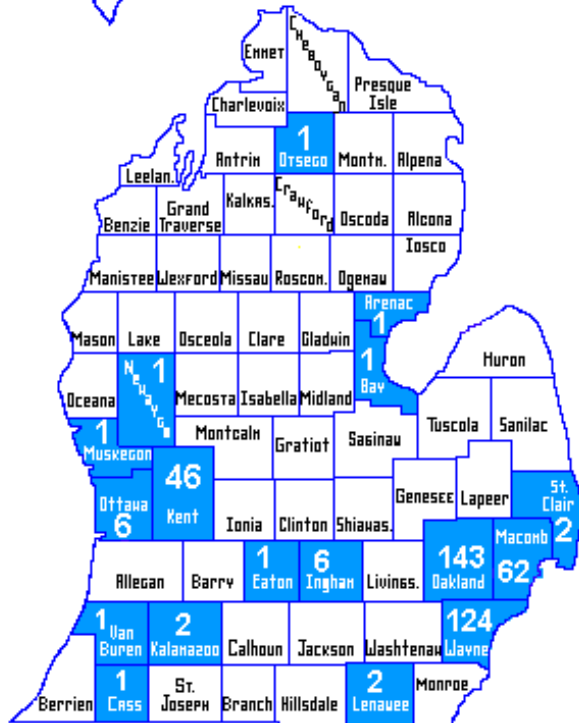
Bird Surveillance



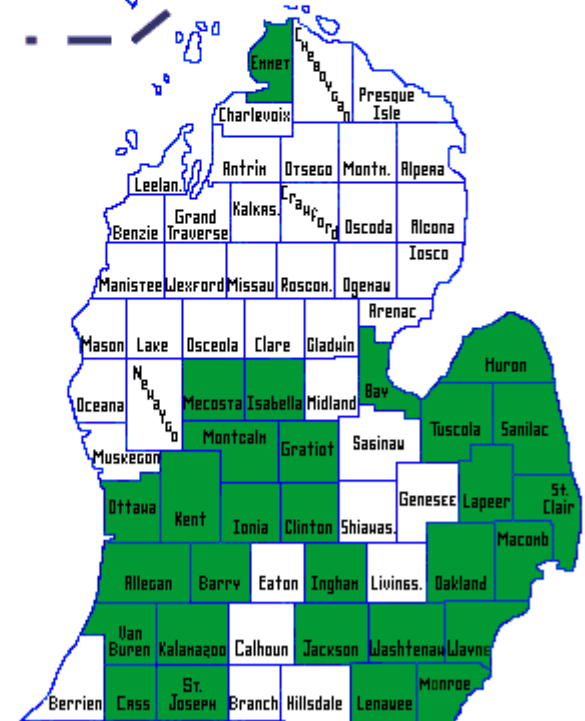
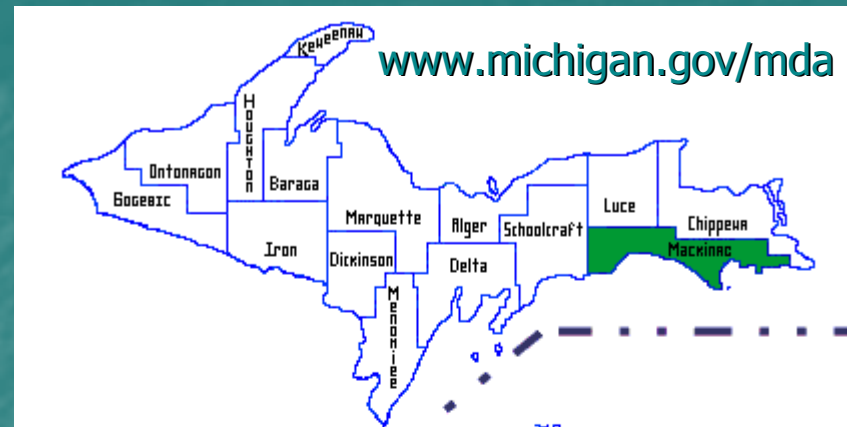
Bird Testing



Human & Horse Cases



■ = Counties with a confirmed positive WNV human case
(total number of confirmed and probable positive cases)



Source Reduction



Education



Information Brochures



6-12



dick@guindoncartoons.com



NATION

West Nile virus travels to Michigan and beyond

BRYN NELSON
NEWSDAY

With West Nile virus' rapid colonization of the Midwest and South, researchers are discovering that infections among new species of birds and mosquitoes, varying geography and changing weather patterns are in essence granting one disease multiple personalities.

Although the basic tenets of disease surveillance and control remain intact, many states are getting forced to reconsider past strategies, as an evolving disease that likely persists in hibernating mosquitoes and hitches rides with migrating birds and has dared public health officials to keep pace.

Last year, West Nile virus was document-

ed in 27 states and the District of Columbia. This year, it has already appeared in 14, including a new foray into eastern Texas.

Dr. Richard Berry, chief of Ohio's vector-borne disease program, said state officials there had been expecting West Nile's return after the virus began popping up in Illinois and Michigan earlier this spring.

Although scientists believe West Nile is slightly less lethal to humans than St. Louis encephalitis, West Nile has displayed much more persistence than its North American cousin. Most health officials agree that the early re-emergence of West Nile through-out the Midwest and South this spring indicates the virus' ability to survive in hibernating mosquitoes, a feat first documented in New York City after the 1999 outbreak.

and likely aided by the succession of relatively mild winters since then.

"We expected it to expand, but it really has gone more rapidly than I had anticipated," said Bob McLean, director of arboviruses at the U.S. Geological Survey's National Wildlife Health Center in Madison, Wis. "The alarming thing is that so many new sites have become sources of the virus. The other big worry is that in places like Florida it can become really ingrained."

So far, the virus seems to be fulfilling the grim forecast. Although West Nile activity in Florida peaked in late September, the state reported infections among horses, birds, and sentinel chickens.

da officials waited until Dec. 31 to remove 53 counties from a medical alert.

Ten days later they collected the first West Nile-infected bird of 2002, a wild turkey in the state's panhandle.

McLean has led a research effort to capture and take blood and feather samples from about 7,000 migratory birds in the past three seasons. Originally focused on sites along the Atlantic Flyway, the researchers have since added trapping sites in Texas and along the Mississippi River to study the Mississippi Flyway, another major migration route.

McLean said birds normally shed their feathers in late summer and early fall.

ing a signature of sorts from where they've been. "So if we pull off a feather from a bird in Florida, and it got the signature," he said, "we can tell that's positive for West Nile. If the bird tests positive for West Nile, researchers may begin to get an idea of how — and where — migratory birds may be spreading the virus."

"Memphis is a good example," he said. "They didn't get any virus until mid-September. And all of the sudden they had 40-some positive birds."

"I suspect the reverse is happening this year," he said. "The birds are bringing it northward." And since birds have different routes in the spring and fall, the virus could zigzag throughout the United States by

Saginaw County spraying for mosquitoes after four birds were found infected with the West Nile virus.

Virus fight under way

Saginaw News 7/19/02 Front Page

Saginaw County is spraying for mosquitoes after four birds were found infected with the West Nile virus.

OLIVIA MUÑOZ
THE SAGINAW NEWS

A fleet of 22 Saginaw County Mosquito Abatement Commission trucks Thursday

night began a "disease detection response" in three communities where four birds infected with the West Nile virus were found, a commission official says.

Workers will continue to spray malathion, a pesticide, for about a week, covering the entire county, said Mosquito Abatement Commission Director William J. Lechel II. Lechel and others are urging mid-Michigan residents to remain calm but take precautions after Thursday's discovery of the birds in Zilwaukee and Saginaw and

Thomas townships.

A Michigan State University Animal Health Diagnostic Laboratory found the birds — three crows and a bluejay — positive for the virus, a mosquito-borne disease humans can acquire.

Researchers believe humans who contract the virus have the potential to develop encephalitis, a fatal disease that causes the brain to swell. There is no human vaccine for the virus.

"The West Nile virus has not proven to be

a problem for anyone in Saginaw County," said County Health Officer John D. Niederhauser. "In fact, there are no human cases anywhere in Michigan."

Lechel sent the dead birds to a state Health Department laboratory for further testing and confirmation, but said the initial tests are accurate. Confirmation could take a week, he said.

The Mosquito Abatement Commission is

PLEASE SEE VIRUS — A2

VIRUS Saginaw County spraying for mosquitoes

CONTINUED FROM A1

still waiting on preliminary test results for 12 more dead birds found in the Saginaw Valley this summer.

"We have no human transmission yet, so people shouldn't panic," Lechel said.

Evidence of the disease is not surprising, said Brian C. Rowe, pesticides section manager at the state Department of Agriculture in Lansing.

"The virus is endemic," he said. "It will generally invade the state. It will be persistent and just kind of come back year after year. It's going to be with us."

So far, only birds have suffered from the virus in Michigan, Niederhauser said.

Though experts say the risk of humans contracting the virus is very low, there are precautions people can take to protect themselves from mosquitoes.

They should make sure mosquitoes

"traps" in the county where mosquitoes are baited with light or dry ice to check their population. Overall, counts are relatively low because of recent dry weather, Lechel said.

Only one species, the coquillettidia perturbans, shows a significant population. They are present because their larva attach themselves to cattail roots, making them almost impossible to eradicate.

The pesticide sprayings this week will kill the adult mosquitoes, Lechel said. The species is especially prominent in the Zilwaukee and Crow Island State Game Area in the northern part of the county.

Besides Saginaw, three other counties in Michigan this year — Genesee, Wayne and Ingham — were sites for dead birds carrying the virus. In 2001, birds with the virus also were found in Macomb, Oakland, Washtenaw, Jackson, Barry, Calhoun and Muskegon counties.

Less than 1 percent of humans bitten by the disease-bearing mosquitoes show severe symptoms, experts

EDITORIALS Sun. July 21 pg 15 Region a step up in virus response

It was only a matter of time before officials detected the potentially fatal West Nile virus in mid-Michigan. The mosquito-borne disease has marched steadily west since it was detected in New York a few years ago. West has killed 19 people in the eastern United States since 1999.

This week, tests on dead birds from Saginaw County confirmed the existence of West Nile in Zilwaukee and Saginaw and Thomas townships. By week's end came word that officials had a

The Mosquito Abatement Commission crews are Saginaw County's version of the Men in Black. Detection of the West Nile virus prompted a quick

confirmed a bird with the virus in northern Tuscola County.

Fortunately for Saginaw, the Mosquito Abatement Commission immediately launched preventative measures. The tax-funded commission launched a fleet of 22 trucks in the three municipalities and began applying pesticides Thursday. Tuscola officials were

Public Service Announcements



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MOSQUITO
CONTROL**

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